

GAS INJECTION FOR UNIFORM
COMPOSITION REACTIVELY
SPUTTER-DEPOSITED THIN FILMS

Abstract of the Disclosure

A method of forming a thin film on a substrate/workpiece by sputtering, comprising steps of:

- 5 (a) providing an apparatus comprising a vacuum chamber including at least one sputtering source and a gas supply means for injecting a gas containing at least one reactive component into said chamber, the gas supply means comprising a plurality of differently-sized outlet orifices adapted for providing substantially the same flow rate of gas from each orifice;
- (b) providing a substrate/workpiece having at least one surface for formation of a thin film thereon;
- 10 (c) generating a sputtered particle flux from the at least one sputtering source;
- (d) injecting the gas containing the at least one reactive component into the chamber via the gas supply means, such that the same gas flow rate is provided at each orifice; and
- 15 (e) forming a reactively sputtered thin film on the at least one surface of the substrate/workpiece, the reactively sputtered thin film having a substantially uniform content of the at least one reactive component.